

PLANES DE MITIGACIÓN CONTRA PELIGROS NATURALES
Resiliencia Planificada



J U N T A D E P L A N I F I C A C I Ó N

2020

Municipality of Añasco

Natural Hazard Mitigation Plan

Executive Summary

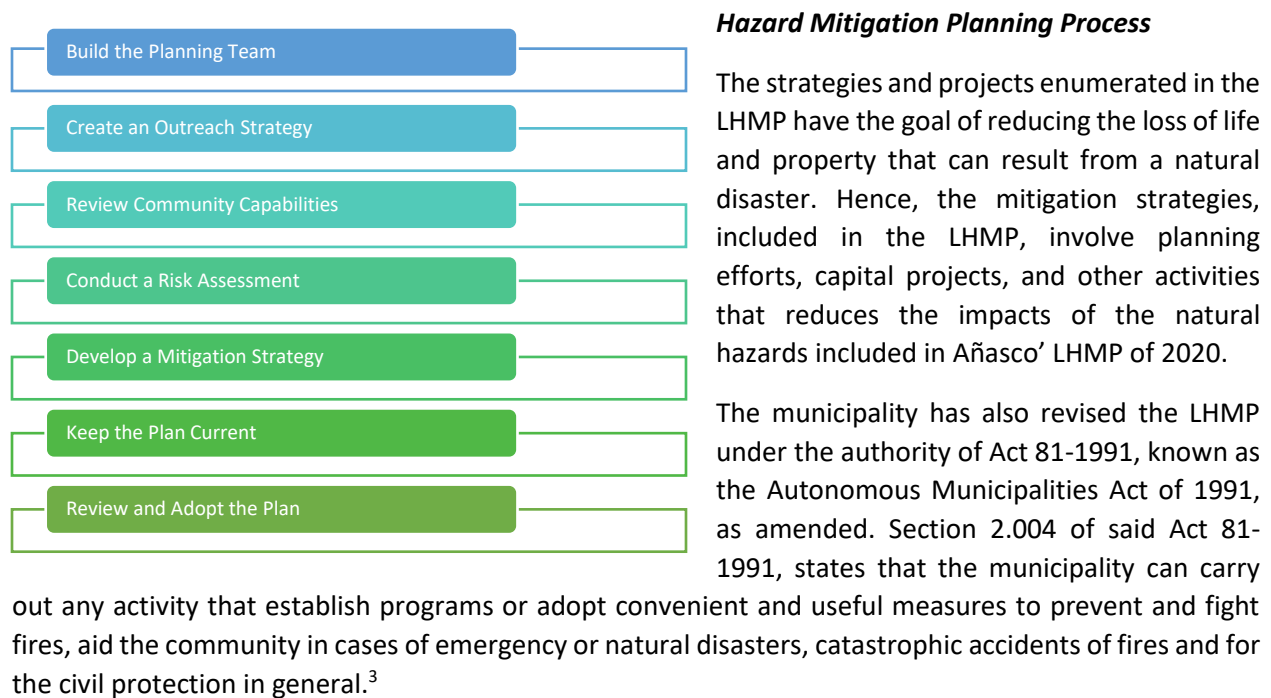


1 Introduction

The municipality of Añasco has revised its Local Hazard Mitigation Plan (LHMP).¹ This complies with the federal Disaster Mitigation Act of 2000 (DMA2K), which was signed into law to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988. One of the requirements that this legislation establishes is that in order for the municipality to receive federal mitigation funds, it must elaborate and adopt a Federal Emergency Management Administration (FEMA) approved LHMP.² Also, the DMA2K promotes that the local government, together with the State, work on pre disaster planning and encourages the development of sustainable hazard mitigation activities.

These LHMPs must be revised and updated every five (5) years to remain in compliance with regulations and Federal mitigation grant conditions. This updating requirement offers the municipality an opportunity to reevaluate recommendations, monitor the implementation of mitigation strategies included in the previous Plan, monitor the impact of mitigation actions that have been implemented, and determine if any changes to the plan need to be incorporated. This plan complies with said regulations.

Figure 1 Hazard Mitigation Planning Process



This Executive Summary will provide an overview on:

- Añasco’ population characteristics;

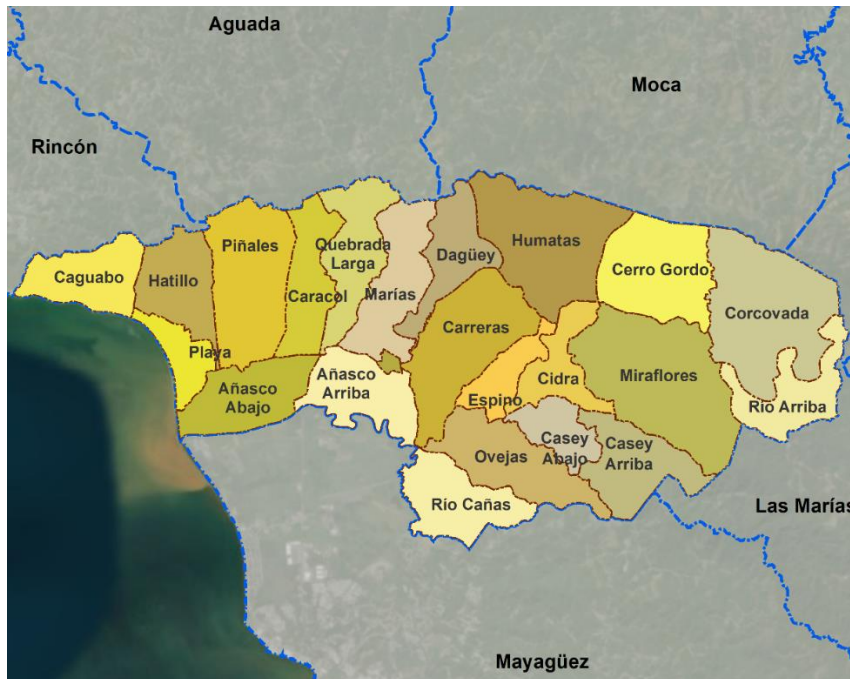
¹ Please note that the 2020 Revised HMP was written in Spanish as per agreement between the Municipality of Añasco, the Planning Board, the Governor’s Authorized Representative (GAR) and FEMA.

² 42 U.S.C 5165; 44 C.F.R. § 201.6.

³ 21 L.P.R.A § 4054

- The public participation and outreach efforts with the community during the LHMP planning process;
- Añasco' risk assessment;
- A review of the mitigation strategies, goals and LHMPs action plan; and
- Plan maintenance, and how to keep the Plan current.

2 Añasco' Profile: Main Population Characteristics



Municipality located in the Añasco River Valley in Puerto Rico's western coast. It has an area of 39.3 square miles. It is bordered by the municipalities of Rincón, Aguada and Moca in the North, Mayagüez to the South, San Sebastián and Las Marías to the East and the Mona Channel to the West.

The municipality has twenty-three (23) *barrios* or wards: Añasco (Pueblo), Añasco Bajo, Añasco Arriba, Caguabo, Caracol, Carreras, Casey Bajo, Casey Arriba, Cerro Gordo, Cidra, Corcovada, Dagüey,

Figure 1 Añasco and its wards

Espino, Hatillo, Humatas, Marías, Miraflores, Ovejas, Piñales, Playa, Quebrada Larga, Río Arriba and Río Cañas.

Several rivers run through the municipality's jurisdiction: Cañas, Casey, Dagüey, Grande de Añasco Hondo and Humatas. The most important is the Grande de Añasco which originates in the Cordillera Central and flows westward to the Mona Channel. Other bodies of water that run through the municipality are the creeks of: La Balsa, Caguabo, Cerro Gordo, Cercada, Chiquita, Grande, Icacos, Justo, Las Piedras and Del Muerto.

Table 1: Population by age group: 2010 and 2017

Population	2010 Census	2017 ACS estimate	% Rate of Change
Younger than 5 years age	1,651	1,256	-23.92%
5 to 19 years of age	6,187	5,180	-16.28%
20 to 64 years of age	17,171	16,334	-4.87%
65 years of age and older	4,252	5,122	20.46%
Total	29,261	27,892	-4.68%

Source: US Census Bureau, Census 2010; American Community Survey 2013-2017 Estimates

According to the 2010 Census, Añasco has a population of 29,261. The American Community Survey (ACS) of 2017 estimated that the population of Añasco had decreased to 27,892 inhabitants. This represents a reduction of 4.68%. Nonetheless this overall reduction, nine of the twenty – three

wards were estimated to have an increase in their population. According to the 2017 ACS, Añasco Bajo was unpopulated, however the Municipal Emergency Management Office points out that there are various families living in this ward. Further details, regarding the profile of the municipality, can be found in Chapter 3, Section 3.2 of the updated 2020 LHMP.

3 Outreach and Public Participation

In order to guide the development of this Plan, Hon. Jorge Esteves Martínez, Mayor of Añasco, appointed the following officials to constitute the Mitigation Planning Committee (henceforth, the Planning Committee). The Planning Committee is comprised by representatives from (3) departments with key roles and experience in community planning, public works, and emergency management to serve as key components in the planning process.

Table 2 Hazard Mitigation Planning Committee

Name	Position	Agency	email
Yareliz Irizarry González	Town Administrator	Municipio de Añasco	ylrizarry@anasco.gobierno.pr
David Rivera	Director	Municipal Emergency Management Program	manejoemerganasco@gmail.com
Migdalia Feliciano	Director	Federal Programs Office	mfeliciano@anasco.gobierno.pr
Yolanda Vélez	Consultant	Federal Programs Consultant	yolymbdc@gmail.com
Mirta Carrero	Consultant	Engineering Consultant	mcarrer2004@yahoo.com

The Planning Committee activities included: (1) updating the list of the municipality assets and local critical facilities; (2) updating the status of the previous LHMP mitigation strategies; (3) determine possible new mitigation strategies for the 2020 LHMP; (4) development and implementation of public participation and outreach activities and stakeholders at large such as neighboring municipalities, governmental agencies; (5) announce the municipality's LHMP efforts to agencies, stakeholders and public feedback for Añasco LHMP 2020 draft version and incorporate such comments on the Plan.

On September 10, 2019, a notice was published on a local newspaper (Metro). Said notice informed the public about the first Public Participation meeting to be held in Añasco. On December 4, 2019, a second notice was published regarding the publication of the 2020 LHMP draft version for review providing 20 days period for review, submit comments, and the opportunity to participate in a second community meeting. A draft version of the 2020 LHMP was made available on the Puerto Rico Planning Board's (PRPB) website (jp.pr.gov), while a hard copy was made available at the Mayor's Office for public review from 8:00 am to 4:00 pm on weekdays.

4 Añasco' Risk Assessment

After reviewing the natural hazards identified as priorities on the previous Añasco' 2013 LHMP, the Municipal Emergency Response Plan, the municipality's disaster history, and other literature related to potential future hazards, the Planning Committee identified the following hazards in the 2020 LHMP; (1) Sea Level Rise, (2) Drought, (3) Earthquakes, (4) Flooding, (5) Landslides, (6) Strong Winds (Tropical Cyclones), (7) Tsunami (8) Coastal Erosion, (9) Storm Surge, (10) Wild Fire. Discussion of these natural hazards are included in the 2020 LHMP's Chapter 4. In addition, the 2020 LHMP includes a quantitative vulnerability analysis based on the best available data for Añasco and Puerto Rico accounting for future development to assess mitigation strategies to prevent repetitive and severe property loss.

This assessment served as a key tool for the Planning Committee and the public to identify and prioritize potential mitigation strategies by focusing attention on areas that present the greatest risk of damages to people, critical facilities, and normal municipality operations. The analysis for earthquake, flood, landslides, and high winds was performed by assessing the potential impacts from each hazard using geographic information system data (GIS).

By ranking each section, the municipality was in position to determine an overall risk classification. It is important to mention that this classification exercise resulted from the municipality's 2020 LHMP technical risk assessment along with a capability gap analysis and the local community input, which is based on previous natural events experienced by the Planning Committee and the residents and business owners of Añasco.

The following table provides a summary of the risk classification for each identified hazard. Part of the process of completing the next appraisal required input from the community as well as from the Committee. Beyond the risk analysis, this table presents the municipality's prioritization analysis.

Table 3 Natural Hazard Ranking

Natural Hazard	Risk to people	Risk to facilities	Risk to operations	Classification
Sea Level Rise	Low	Low	Low	Low
Drought	Low	Low	Low	Low
Earthquake/Liquefaction	High	High	High	High
Flooding	High	Moderate	High	High
Landslide	High	Moderate	High	High
Strong Winds/Tropical Cyclones	High	High	High	High
Tsunami	Low	Low	Low	Low
Storm Surge	High	Moderate	Moderate	Moderate
Coastal Erosion	High	Moderate	Moderate	Moderate

Natural Hazard	Risk to people	Risk to facilities	Risk to operations	Classification
Wildfire	Low	Low	Low	Low

Source: Planning Committee 2019-2020

Currently, the potential risks with the highest classification or greater impact identified for the municipality are: (1) earthquake/liquefaction (2) flooding; (3) landslide and (4) strong winds.

A ranking methodology was adopted to develop the mitigation strategies based on these risks as discussed on Chapter 6 and are divided into the following categories: (1) Prevention, (2) Property Protection, (3) Natural Resources Protection, (4) Structural Projects, (5) Emergency Services, and (6) Education and Public Awareness. The strategy category with most mitigation actions is “Prevention” with a total of 15 mitigation projects. Landslide and flooding are the natural hazards that are most addressed within the mitigation actions.

5 Mitigation Strategies, Goals, and Action Plan

The municipal capabilities, along with the risk assessment, serve as a foundation for the design, development and implementation of mitigation strategies. Mitigation strategies, found in Chapter 6, consist of a broad amount of local goals and strategies. The local mitigation actions were gathered from the 2012 LHMP and were incorporated into the current LHMP. This chapter provides information about the assigned implementation mechanisms and target completion dates. The sections in this chapter are designed to make the Plan strategic by identifying long-term goals, and functional, by identifying short term and immediate actions that will guide the daily local decision-making process and project implementation.

Mitigation goals consist of general guidelines that explain what the Municipality of Añasco wants to achieve in terms of hazards and mitigation. Thus, the goals included in the 2020 LHMP, offer the Planning Committee and the communities a framework for identifying, prioritizing and implementing actions to reduce the risks associated to natural hazards at Añasco.

Mitigation strategies are activities, projects, measures, or processes that Añasco will adopt in order to reduce or eliminate risk to people and property from hazards. Consequently, Añasco reviewed and revised the criteria adopted in the 2013 LHMP to analyze and prioritize potential mitigation strategies for the municipality. In order to develop the actions, the Planning Committee used the following criteria: (1) the potential of the strategy to reduce expected future damages and/or losses; (2) the capacity of the municipality to implement the action within the 5-year cycle of the Plan; (3) support from the public, agencies, municipal departments, amongst others; and (4) the potential of the action to increase resiliency of Añasco and its residents. Accordingly, the Planning Committee adopted these criteria, the results from the risk assessment, and the feedback from local and neighboring communities to prioritize each mitigation strategy that was contained in this LHMP.

Most of the strategies and projects in the action plan target the continuity of municipality services after a hazard event. The following summarizes some of the strategies intended to mitigate these hazards:

- Relocation of 40 housing units with repetitive losses in the following communities; Urb. Brisas de Añasco, Parcelas María, Espino, Añasco Arriba, Sector Pagán, Playa and Añasco Bajo.

- Developing a municipal program for rainwater harvesting.
- Soil stabilization in the Ajies Sector of the María ward.
- Conducting a study of possible strong winds mitigation actions and structural improvements for structures in the designated “special communities” of La Choza in Pinales Wards, Parcelas de Ajies in María and Playa wards.
- Implementing a flood prevention program for critical facilities such as the Government Center, Police Station, Town Hall, and Elderly Care Center.

6 Maintenance to Keep the Plan Current

Chapter 7 details the revision and monitoring process in great extent. The formal maintenance process, identified by the Planning Committee, aims to keep the document viable and current, as it is a living document that shall reflect the hazards and realities affecting its community, and how to plan and prepare ahead in the event of a natural disaster. The plan maintenance process provides the procedures for evaluation and review every third quarter of each fiscal year during its 5-year life cycle. Evaluation will include a review of the mitigation action plan implementation, continued public involvement through the Plan’s life cycle, as required by federal legislation. As part of the review process, the members of the Planning Committee. In the event of a major natural disaster affecting the island and/or municipality, an emergency meeting must be scheduled, and the Plan should be updated or amended, as necessary, bypassing the 5-year term. The Municipal Administrator will coordinate with other municipal dependencies, as needed, to achieve the goals and objectives stated in this LHMP.

Finally, the municipality will promote continued public participation during the plan maintenance by;

- Regularly surveying the public on perceived hazards, dangers and mitigation actions in the municipality.
- Placing a copy for public review every time a progress report on the LHMP is prepared.
- Providing regular presentations to community groups regarding the content and progress of the LHMP.
- Having a robust education program regarding the NFIP program and NFIP recommendations.

7 Plan Approval and Adoption

The Federal Emergency Management Agency (FEMA) completed review of the Municipality of Añasco Hazard Mitigation Plan, based on the standards pursuant to title 44 C.F.R. Section 201 as authorized by the Disaster Mitigation Act of 2000 (DMA2k). The Plan received a satisfactory rating for all required criteria and was approved as approvable pending adoption (APA) on July 14, 2020. Accordingly, the Municipality of Añasco, adopted said Plan on July 21, 2020 via Executive Order No. 03-JEM, Series 2020-2021.

Upon receiving the record of adoption from the municipality, FEMA approved Plan by July 27, 2020 and issued an official approval letter to municipality that dates from July 28, 2020 stating the jurisdiction has adopted said Plan thus approved and eligible for FEMA Hazard Mitigation Assistance programs. The approval letter includes the expiration date 5 years from the date of approval, or until July 26, 2025.